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AMECYSTIS, A NEW GENUS OF ORDOVICIAN CYSTIDEA.[1]

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In a recent publication Raymond[2] described a new species of Cystid under the name *Pleurocystites laevis*. This species he states is chiefly remarkable in that it lacks pectinirhombs and surface sculpture. The absence of pectinirhombs is not an abnormality or due to weathering. The species is referable to a new genus, for which we propose the name **Amecystis** (ἄμη, a shovel), with *Pleurocystis laevis* Raymond[3] as the genotype. Two other species belonging to the genus are known which diverge somewhat from the type species but agree in gross structure and in the absence of rhombs.

Amecystis may best be defined as a *Pleurocystis* lacking pectinirhombs. The evidence is perfectly clear on this point. A large number of specimens in a splendid state of preservation have been examined, and in none is there a trace of rhomb structure. Even in the one species known that has radiating surface ridges, the ridges appear rather as superficial ornamentation than as stereom folds. The arrangement of plates is as in *Pleurocystis*. The anal side is nearly always poorly preserved owing to the fact that it is made up of very small plates and is less rigid than in *Pleurocystis*. The anal pyramid has doubtfully been determined as having the same position as in *Pleurocystis*.

Amecystis laevis (Raymond) or a very closely related species also occurs in the Curdsville limestone of Mercer County,

[1] Published by permission of the Director of the U. S. Geological Survey.

[2] Raymond, P. E., "A contribution to the description of the fauna of the Trenton Group:" Canada Dept. Mines, Geol. Survey Mus. Bull. No. 31, Geol. Ser. No. 38, Feb., 1921.

[3] Op. cit., p. 2, Pl. II, figs. 1–3.

Kentucky. The other two species are from widely separated localities and are found in earlier deposits. One comes from the Black River Rhinidictya beds of Minneapolis, Minnesota, and the other from the Chambersburg limestone near Chambersburg, Pennsylvania.

The Minneapolis species has a very thin and fragile test, is of smaller size, and has a surface covered by small granules. The Chambersburg species is notable in having heavier plates than *Amecystis laevis* and in the possession of well defined linear surface sculpture, though pectinirhombs or porerhombs are not developed.

The absence of pectinirhombs or even porerhombs in *Amecystis* opens an interesting field of speculation as regards Cystid evolution and systematic classification. It is scarcely conceivable that *Amecystis* is a homoplastic derivative of a totally distinct genetic line from *Pleurocystis*. Owing to the essential structural identity of *Amecystis* and *Pleurocystis* other than in the possession of pectinirhombs we can scarcely go further than postulate a common rhombless ancestor for both. Indeed it is possible that forms referable to *Amecystis* were ancestral to *Pleurocystis*. The age relations of the two genera point to such a possible relationship. Although *Amecystis laevis* (Raymond) ranges on into the Trenton, the other species are of Black River age, and it will probably be found that the genus had its greatest development in Chazyan and Black River times, whereas *Pleurocystis* is typical of the Trenton.

The more or less abrupt acquisition of porerhombs and even the highly specialized pectinirhombs by genetic lines in which stereom-folds are poorly developed or absent make the transition from the Amphoridea to the Rhombifera a simple one. However, the assignment of *Pleurocystis* to the Anomalocystidae as made by Haeckel is still unwarranted. The facts observed do suggest that the order Aporita is unnecessary, and that the contained forms might well be referred to the Rhombifera as now defined.